

REMARKS

In the Action, claims 1-10, 27 and 28 are withdrawn from consideration as being directed to the non-elected invention, and claims 11-26, 29 and 30 are rejected. Applicants affirm the election of claims 11-26, 29 and 30. In response, new claims 31-33 are added. The pending claims being examined are claims 11-26 and 29-33, with claims 11 and 31 being independent.

New claims 31-33 are directed to the recording medium for an inkjet printer comprising a substrate and an ink acceptable layer where the layer comprises an inorganic filler in an amount of 50 to 90 parts by weight, a hydrophilic binder and a core shell structured cationic latex in an amount of 0.5 to 20 parts by weight, and a polyamide epichlorohydrin resin in an effective amount to cross-link the core-shell structured cationic latex and to act as a dye fixing agent. Support for claim 31 is found in original claims 11 and 14, and in paragraph 56 on page 10 of the specification. Claim 32 recites the specific amounts of the polyamide epichlorohydrin resin and the hydrophilic binder as in original claim 14. Claim 33 depends from claim 32 to recite the polyamide epichlorohydrin resin being a mixture of a polyamide compound and an epichlorohydrin compound as disclosed in paragraph 52 on page 9 of the specification. Accordingly, the claims are supported by the application as originally filed and read on the elected invention.

In view of these amendments and the following comments, reconsideration and allowance are requested.

The Rejection

Claims 11-26, 29 and 30 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,521,342 to Hutter et al. in view of U.S. Patent No. 5,856,001 to Okumura et

al. Hutter et al. is cited for disclosing an inkjet recording medium where the coating comprises pigments, binders, and a crosslinking agent. The Action further contends that Hutter et al. discloses the use of an epichlorohydrin polyamine condensate as a dye fixative.

The Action recognizes that Hutter et al. does not disclose the combination of a polyamide epichlorohydrin resin and a core-shell cationic latex as in the claimed invention. The Action contends that it would have been obvious to one of ordinary skill in the art to use a polyamide epichlorohydrin and the cationic acrylic latex of Hutter et al.

The claims are non-obvious over the cited art since the cited art does not disclose or suggest the combination of a core-shell cationic latex and a polyamide epichlorohydrin resin. The art of record further fails to disclose the claimed components in the claimed amounts.

Hutter et al. does not specifically disclose the use of epichlorohydrin polyamine condensates in the cationic core-shell particles. The passage referred to in the Action discusses the prior processes that disclose generally “cationic dye fixative agents” in the coatings. The epichlorohydrin polyamine condensates are disclosed as one of the cationic dye fixatives. The passage referred to in the Action also discloses that cationic acrylic or styrene lattices can be used as fixatives for anionic dyes in inkjet receptive coatings as an alternative to water-soluble cationic resins.

Hutter et al. does not disclose or suggest the use of the conventional dye fixatives in combination with the core-shell particles. As disclosed in the paragraph beginning in column 6, line 62 of Hutter et al., the cationic nature of the core-shell particles serve to fix the anionic dyes. The cationic nature of the core-shell particles can be increased by incorporating ethylenically unsaturated monomers containing a quaternary ammonium group in the production of the polymeric shell. Hutter et al. provides no suggestion of the combination of a polyamide epichlorohydrin resin and a core-shell cationic latex as in the claimed invention.

As disclosed on page 10 of the specification, the polyamide epichlorohydrin resin of the present invention acts as a crosslinker, while the cationic component of the polyamide acts as a dye fixing agent together with the cationic latex. Thus, the combination of the polyamide epichlorohydrin resin and the core-shell cationic latex provide a synergistic effect. The acidic polyamide epichlorohydrin resin with the shell part of the core-shell cationic latex cause the shell to expand during coating and drying to improve water resistance of the coating layer. In the prior processes, water resistance is imparted by a conventional crosslinking agent which deteriorates the ink absorption, and the moisture resistance is reduced. In contrast, the claimed invention provides improved water resistance by using the combination of a polyamide epichlorohydrin with the core-shell cationic latex.

Okumura et al. also fails to disclose the combination of the claimed polyamide epichlorohydrin resin and a core-shell cationic latex polymer. Okumura et al. is an example of the prior processes discussed in Hutter et al. that relate to enhancing water resistance of printed images formed from an aqueous ink. The passage in column 6 of Okumura et al. discloses the use of a cationic polymer to enhance water resistance where the cationic polymer can be a polyamide epichlorohydrin resin.

Okumura et al. is specifically directed to a recording medium that uses a porous xerogel pigment particle having a specific pencil scratch value. This has no relation to the claimed invention. Furthermore, Okumura et al. provides no motivation or incentive to use the polyamide epichlorohydrin resin in combination with the latex of Hutter et al. The passage referred to in Hutter et al. discloses conventional fixatives for anionic dyes, while Okumura et al. discloses polymers for enhancing water resistance. Therefore, the disclosures of Okumura et al. and Hutter et al. are not analogous. Furthermore, even if Okumura et al. were relevant to Hutter et al., Okumura et al. and Hutter et al. provide no motivation to combine the teachings.

Accordingly, it would not be obvious to use the polyamide epichlorohydrin of Okumura et al. in combination with the latex of Hutter et al.

In view of the above, independent claim 11 is not obvious over the combination of Hutter et al. and Okumura et al. The dependent claims are also allowable as depending from an allowable base claim and for reciting additional features of the invention that are not disclosed or suggested in the art of record, in combination with the features of claim 11. For example, the cited art does not disclose the substrates of claim 12 or the thickness of the substrate as in claim 13 in combination with the features of claim 11.

Claims 14 and 16 depend from claim 11 and recite the specific amounts of the inorganic filler, hydrophilic binder, core-shell structured cationic latex and the polyamide epichlorohydrin resin. In particular, these claims recite 50 to 90 parts by weight of an inorganic filler and 0.5 to 20 parts by weight of the core-shell structured cationic latex. Column 8, lines 33-38 of Hutter et al. discloses the coatings containing 25% to 50% of the latex, and preferably 35% to 45%. Thus, Hutter et al. specifically discloses a minimum amount of the core-shell latex particles in an amount that exceeds the upper limit of the composition recited in claims 14 and 16. Hutter et al. also fails to disclose the specific amounts of the inorganic filler and hydrophilic binder. Hutter et al. and Okumura et al. further fail to disclose the amounts of the polyamide epichlorohydrin resin recited in claims 14 and 16. Accordingly, these claims are not obvious over the combination of the cited patents.

Hutter et al. and Okumura et al. also fail to disclose the core-shell structured cationic latex as defined in claims 17 and 18 in combination with the features of claim 11. The art of record also fails to disclose a mixture or compound having a polyamide group and an epichlorohydrin group as in claim 19, the inorganic fillers of claims 20 and 21, hydrophilic binder of claim 22, the dimensions of the layer of claim 23, the undercoating of claim 24, the

protective coating of claim 25, or the back coating of claim 26, in combination with the features of claim 11. The art of record also fails to disclose the core-shell structured cationic latex being an acrylate based cationic latex of claim 29, or the alumina of claim 30, in combination with the features of claim 11. Accordingly, these claims are not obvious over the art of record.

New claim 31 is also directed to a recording medium where the ink acceptable layer comprises an inorganic filler, hydrophilic binder, and a core-shell structured cationic latex and a polyamide epichlorohydrin resin in an amount to cross-link the core shell structured cationic latex and to act as a dye fixing agent together with the cationic latex. For the reasons discussed above, these features are not disclosed or suggested in Hutter et al. or Okumura et al. Furthermore, Hutter et al. and Okumura et al. do not disclose an ink acceptable layer comprising 50 to 90 parts by weight of an inorganic filler and 0.5 to 20 parts by weight of a core-shell structured cationic latex. Hutter et al. and Okumura et al. also fail to disclose a polyamide epichlorohydrin resin for crosslinking with the core-shell cationic latex and to function as a fixing agent. Accordingly, claim 31 is allowable over the art of record.

The art of record further fails to disclose the amounts of the polyamide epichlorohydrin resin and the hydrophilic binder of claim 32, or the polyamide epichlorohydrin resin being a mixture of a polyamide compound and an epichlorohydrin compound as in claim 33, in combination with the features of claim 31.

In view of these amendments and the above comments, reconsideration and allowance
are requested.

Respectfully submitted,



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